

IN THE CLAIMS

1. (Previously Presented) An electric motor assembly, comprising:
a fluid circulation circuit;
a housing having a cavity that is fluidly connected to said fluid circulation circuit;
an electric motor having at least one electric motor component disposed in the cavity;
and
a thermally conductive dielectric fluid for circulation through the cavity to substantially submerge said at least one electric motor component.
- 2.-3. (Cancelled)
4. (Previously Presented) The assembly of claim 1, wherein the housing further comprises a cylindrical partition and the electric motor comprises a rotor, a stator iron, and a stator winding, the partition separating the rotor from the stator iron and the stator winding,
wherein a space between an exterior portion of the partition and the housing forms a cavity, and wherein the thermally conductive dielectric fluid fills the cavity to substantially submerge at least one of the stator iron and the stator winding without contacting the rotor.
5. (Cancelled)
6. (Previously Presented) The assembly of claim 1, wherein the dielectric fluid is a dielectric oil.
- 7.-9. (Cancelled)
10. (Previously Presented) The assembly of claim 1, wherein the housing has a fluid inlet and a fluid outlet, and wherein the system further comprises:
a fluid pump that circulates the dielectric fluid through the fluid inlet into the cavity and out of the fluid outlet; and
a fluid reservoir that houses excess dielectric fluid.

11. (Previously Presented) The assembly of claim 1, further comprising a heat exchanger in fluid communication with the dielectric fluid.
12. (Cancelled)
13. (Previously Presented) The assembly of claim 1, wherein said at least one electric motor component includes one of a rotor and a rotor bearing substantially submerged in said thermally conductive fluid.
14. (Previously Presented) The assembly as recited in claim 1, wherein said dielectric fluid is in fluid communication with a bearing which supports a rotor shaft.
15. (Previously Presented) The assembly of claim 1, wherein said at least one electric motor component comprises a rotor rotatable about a rotor axis, said rotor rotatable while substantially submerged in said dielectric fluid to circulate said dielectric fluid through said cavity.
16. (Previously Presented) The assembly of claim 1, wherein said fluid circulation circuit includes a portion that is outside of said housing.
17. (Previously Presented) The assembly of claim 1, wherein said electric motor includes a rotor output shaft that is coupled to a gas turbine engine, said engine in fluid communication with said fluid circulation circuit.
18. (Previously Presented) The assembly of claim 17, wherein said dielectric fluid comprises engine oil received from said engine through said fluid circulation circuit.
19. (Cancelled)
20. (Withdrawn) A method of cooling and lubricating an electric motor assembly, comprising:

(1) circulating a dielectric fluid through a motor housing cavity having an electric motor disposed therein;

(2) communicating heat from the electric motor directly into the dielectric fluid; and

(3) lubricating a moving component of the electric motor with the dielectric fluid.

21. (Withdrawn) The method of claim 20, wherein said step (1) further comprises directly transferring heat from a rotor bearing of the electric motor to the dielectric fluid, and said step (2) further comprises lubricating the rotor bearing with the dielectric fluid.

22. (Withdrawn) The method of claim 20, further comprising:

(4) rotating a component of the electric motor to circulate the dielectric fluid through the motor housing cavity.

23. (Withdrawn) The method of claim 20, wherein said step (1) further comprises circulating the dielectric fluid between the motor housing cavity and an engine and selectively operating the electric motor to drive the engine.

24. (Previously Presented) The assembly of claim 10, wherein said fluid inlet is an exclusive fluid input into said housing.

25. (Previously Presented) The assembly of claim 10, wherein said fluid outlet is an exclusive fluid outlet from said housing.

26. (Previously Presented) The assembly of claim 10, wherein said fluid outlet is an exclusive fluid outlet from said housing and said fluid inlet is an exclusive fluid input into said housing.

27. (Currently Amended) The assembly of claim 10, 12, wherein said fluid pump is located between said fluid reservoir and said filter.

28. (Previously Presented) The assembly of claim 4, wherein said partition is a cylinder.

29. (Previously Presented) The assembly of claim 28, further comprising at least one seal member located radially inward of said partition and radially outward of said housing.

30. (Previously Presented) The assembly of claim 28, further comprising a first seal member located near a first end of said partition and a second seal member near a second, opposite end of said partition.